Clinical Guideline

MANAGEMENT OF ACUTELY DISTURBED ADOLESCENTS

SETTING  Bristol Royal Hospital for Children (BRHC)
FOR STAFF  All acute medical and nursing staff
PATIENTS  Acutely disturbed children and adolescents – 10 to 16 years old

GUIDANCE

- This guideline MUST be used in conjunction with the Bristol Children’s Hospital Mental Health Pathway and Risk Assessment Matrix and the NICE guideline on the short-term management of disturbed/violent behaviour in inpatient psychiatric settings and emergency departments CG025.

- The aim of this guideline is to quickly calm acutely disturbed patients (not to induce sleep or unconsciousness) and to reduce the risk of violence and harm to patient and others.

- The decision to use the guideline must be taken jointly between senior medical and nursing staff.

- Advice from the Child and Adolescent Mental Health Services (CAMHS) team must be sought at the earliest opportunity – if possible before medications are used.

- Please follow the checklists for each step of the guideline.

Checklist for all Steps

- Lorazepam (oral and intramuscular (IM)) are the first-line agents for rapid tranquillisation following the use of non-medical measures.

- Review notes + medications chart; check contraindications/interactions if using medications (for example antipsychotic naïve if using antipsychotics, prolonged QTc on electrocardiogram (ECG) or other cardiac disease, history of neuroleptic malignant syndrome (NMS) or other severe drug reaction, intoxication with alcohol or drugs (use benzodiazepines with caution).

- Physical examination – assess hydration, blood pressure, pulse, temperature, abnormal movements, evidence of intoxication/illicit drugs.

- Obtain patient/parent/carer consent as soon as possible and document in medical notes. Consideration should be given to the Mental Health Act Code of Practice.

- Clinical assessment and subsequent plans should be discussed by the consultant and senior nurse responsible and documented in the medical notes.

- Contact the consultant CAHMS psychiatrist at the earliest opportunity.

- Promethazine (oral and IM for those with known benzodiazepine sensitivities); risperidone (orodispersible) and haloperidol (IM and oral) are available in the Children’s Emergency Department and on ward 35, however any medication (in addition to lorazepam) will need to be decided in consultation with a CAMHS psychiatrist and would depend on the clinical situation.

- Ensure access to flumazenil if using lorazepam and procyclidine if using antipsychotics.
MANAGEMENT OF ACUTELY DISTURBED ADOLESCENTS

Step 1: Non-medication measures (If responding do not proceed to Step 2)

Always try de-escalation techniques such as engaging patient, talking down, time out, using non-verbal communication and moving patient to a low stimulus environment initially as these can often be highly effective.

See “Checklist for all steps”

Checklist for Step 2

- Monitor temperature, pulse, blood pressure, GCS and respiratory rate at half hour intervals until ambulatory.
- Consider ECG (required if haloperidol requested by CAHMS psychiatrist).
- Review if further medication necessary or prolonged restraint.

Checklist for Step 3

- Monitor temperature, pulse, blood pressure, GCS and respiratory rate every 10 – 15 minutes for the first hour then at half hourly intervals until ambulatory.
- Ensure access to oxygen/resuscitation equipment.
- Ensure access to Flumazenil IV.
- Consider ECG (needed if CAHMS request haloperidol).
- Further medication: Wait at least 30-60 minutes between IM Injections and only give in consultation with CAMHS psychiatrist.

Step 2: Consider Oral medication (If responding do not proceed to Step 3)

- Oral Lorazepam:
  a. >12 years: 1 to 2mg
  b. 10 – 12 years: 1mg
Maximum of 4mg/24 hrs; Minimum of 1 hour between doses.

If known contraindication/sensitivity consider:

- Promethazine 25mg (> 10 years) up to twice daily. Maximum of 50mg/24 hrs.
- Continue talking and using non-drug approaches.

See checklist for Step 2.

Step 3 - Consider IM therapy if patient refuses oral medication, if oral ineffective, or if an effect is essential within 30 minutes (due to serious risk from physical restraint).

- IM Lorazepam:
  a. >12 years 1 to 2mg
  b. 10 – 12 years 1mg
Maximum of 4mg/24 hrs; Minimum of 30-60 minutes between doses.

If known contraindication/sensitivity consider:

- Promethazine: 25mg (> 10 years) up to BD. Maximum of 50mg/24 hrs.
- Continue talking and using non-drug approaches.

See checklist for Step 3


RELATED DOCUMENTS
Bristol Children’s Hospital Mental Health Pathway
Risk Assessment Matrix
NICE Guideline CG025

SAFETY
Anti-psychotics must only be used following CAMHS consultation

QUERIES
Contact CAHMS team through switchboard.
## FURTHER INFORMATION ON MEDICINES USED IN RAPID TRANQUILISATION

<table>
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<tr>
<th>Medicine</th>
<th>Route</th>
<th>Pharmacokinetics</th>
<th>Major Side Effects</th>
<th>Notes</th>
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<tr>
<td><strong>Lorazepam</strong></td>
<td>Oral or IM</td>
<td>Onset 20 – 40mins Peak 60 – 90 mins Half-life 12 – 16hrs</td>
<td>Respiratory depression Loss of consciousness Disinhibition</td>
<td>Injection must be diluted 1:1 with Water For Injection(WFI) or 0.9% Sodium Chloride for Injection prior to administration e.g. 0.5ml Lorazepam Inj: 0.5ml WFI Do not mix in same syringe as haloperidol (or any other drug). Administer separately I/M Lorazepam MUST NOT be given within ONE HOUR of I/M Olanzapine I/M absorption is as slow as oral absorption, but is rapid in an active patient Respiratory depression is readily reversed with the benzodiazepine antagonist Flumazenil Injection (IV use only) Usual maximum BNF dose of Lorazepam = 4mg in 24hours. Higher daily doses only after discussion with Consultant Psychiatrist Not licensed in children less than 12years except for status epilepticus</td>
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<tr>
<td><strong>Promethazine</strong></td>
<td>Oral</td>
<td>Onset 20mins Peak 2 – 3hrs Half-life 5 – 14hrs</td>
<td>Prolonged sedation Seizures Cardiorespiratory depression Painful Injection Additional anticholinergic effects</td>
<td>Injection does not need to be diluted Promethazine is a sedating antihistamine It may be considered as an alternative sedative agent in those that are antipsychotic naïve, who have been administered the maximum dose of medication, or in whom benzodiazepines are not tolerated. Should be used with advice from Consultant Usual maximum of 50mg in 24 hours. Higher doses (up to 100mg in 24hours) can only be used after discussion with the Consultant. Do not administer I/M Promethazine within ONE HOUR of I/M Olanzapine I/M licensed for children of 2years and above. Oral licensed for children in doses up to 50mg daily</td>
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<tr>
<td></td>
<td>I/M</td>
<td>Onset 20mins Peak 2 – 3hrs Half-life 5 – 14hrs</td>
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<tr>
<td><strong>Risperidone</strong></td>
<td>Oral</td>
<td>Peak 1 – 2hrs Half-life 18hrs</td>
<td>EPSE Hypotension</td>
<td>Less likely to cause EPSE’s than Haloperidol Not licensed for use in children under 18yrs (except for conduct disorder) Usual oral dose 0.5mg-2mg (max16mg/24hrs)</td>
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<tr>
<td></td>
<td>oral</td>
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<tr>
<td><strong>Haloperidol</strong></td>
<td>Oral</td>
<td>Onset 1 – 2hrs Peak 4 hrs Half-life 21hrs</td>
<td>EPSE Hypotension Increased QTc interval or arrhythmias which may lead to sudden death Seizures Neuroleptic malignant syndrome (NMS)</td>
<td>Ensure that I/M Procyclidine is available to treat acute dystonias The bioavailability of oral and I/M Haloperidol is different. This must be taken into account when considering total dose in a 24hr period 5mg oral Haloperidol = 3mg I/M Haloperidol ECG recommended Not recommended for IV use because of the risk of arrhythmias I/M not recommended for use in children Usual dose Oral/IM 1 to 5mg. Usual max BNFC dose of oral haloperidol 6mg in 24 hours. Higher doses of 20mg orally/24hrs and IM 12mg/24hrs should only be used after discussion with Consultant Psychiatrist. In adolescents they can receive the adult dose of 2.5-5mg IM for rapid tranquilisation.</td>
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<tr>
<td></td>
<td>IM</td>
<td>Onset 20 – 30mins Peak 1 hr Half-life 21 hrs</td>
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Appendix 1: Further Information on Medication

- **Lorazepam** IM injection must be diluted 1:1 with water for injection or 0.9% sodium chloride injection prior to administration e.g. 0.5ml (2mg) lorazepam injection with 0.5ml water for injection.

- **Flumazenil** (Benzodiazepine antagonist) should be given if respiratory rate drops below 10 breaths/min after administration of benzodiazepines. **Flumazenil must be given by IV injection, must have been prescribed and the indication reviewed by the doctor before administration.** The recommended dosage is as follows:
  - 10 micrograms/kg (max 200 micrograms/dose) IV repeated at 1 minute intervals if necessary total max total dose of 50 micrograms/kg (1mg) (2mg if in PICU).

  Monitor respiratory rate continuously until back to baseline.
  Caution: Flumazenil may wear off before the adverse effects of Lorazepam so monitor carefully.

  Flumazenil should only be administered if the potential benefits outweigh possible risks. It is generally well tolerated and side effects subside rapidly. Patients may become agitated, anxious or fearful on awakening due to reversal of benzodiazepine and may experience nausea, vomiting or flushing, rarely seizures.

- Flumazenil will only treat respiratory depression caused by benzodiazepines. Other causes of respiratory depression may require mechanical ventilation.

- **Acute dystonia** should be treated with IM *procyclidine* injection (dose for 10 – 18 years is 5 – 10mg). It is usually effective in 5 – 10 minutes but may need 30 minutes for relief. Non-acute dystonias should be treated with oral procyclidine (dose for 12 – 18 years is 2.5mg) three times a day. There is no justification for administering procyclidine in the absence of dystonias.

- **Significant fall in Blood Pressure (BP) (systolic <90),** irregular or slow heart rate (<50 bpm), a fall in GCS or abnormal respiratory rate (<15) will require a medical review.

- **Signs of NMS (hyperpyrexia, rigidity, confusion, autonomic instability) will require a medical/ITU referral.**

**References**

This guideline has been developed and approved in consultation with the CAMHS Consultant Psychiatric Team at the Riverside Adolescent Mental Health Unit and is adapted from the current guideline in use there. The following references have also been used in the construction of this guideline:

2. BNF for Children: [http://www.bnf.org/bnf/org_450055.htm](http://www.bnf.org/bnf/org_450055.htm)